Classification: Utilities Engineer	**Position No.** 3100-3518-001
CBID: R09	**Office:** Energy Efficiency Research Office
Date Prepared: December 2018	**Division:** Energy Research and Development
KEY: (E) IS ESSENTIAL, (M) IS MARGINAL	

Under the general direction of the Energy Resources Specialist III (Supervisor) in the Energy Efficiency Research Office's Building Efficiency Research Unit, the incumbent performs mechanical, electrical, and civil engineering work in the design, construction, operation and maintenance of electrical or natural gas building efficiency research projects. The incumbent conducts investigations and prepares reports involving engineering economics which includes studies of capital costs, financial structure, depreciation, physical plant inspections, valuations, revenues, and expenses. The incumbent develops, implements, and performs engineering and technical analysis to support new and existing research agreements. The incumbent provides analysis in support of research and development, demonstration and deployment of energy and greenhouse gas reducing technologies funded by the Energy Commission with the goal of determining and documenting technical and economic feasibility, energy savings and other benefits. The incumbent contributes engineering skills when reviewing and/or preparing engineering and environmental studies and evaluations. The incumbent is knowledgeable of multiple aspects of engineering such as energy/mass balances, thermodynamics, fluid mechanics, combustion, strength/properties of materials, statistical analyses, testing of equipment, economics and interpretation of technical codes and standards.

WORKING CONDITIONS:

The work is performed in an indoor office and meeting room setting involving sitting, standing, and walking. The candidate must work well with people inside and outside the Energy Commission, including members of the general public. Travel is required to conduct detailed field inspections of projects and assessment of mechanical installations, and to attend workshops, hearings and meetings. Additional hours beyond an eight-hour workday or forty-hour workweek may be required. While performing the duties described below, the incumbent will be required to work alone and/or in a team environment; use a personal computer and appropriate Energy Commission software such as word processing, electronic mail and Internet; and participate in and lead meetings with other staff and with other agencies. The incumbent may be also required to use software tools to perform engineering analyses.

DUTIES AND RESPONSIBILITIES:

50% **Technology Assessment.** The incumbent: a) reviews and/or prepares engineering and economic studies or evaluations of technologies, practices and designs related to buildings, industrial, food processing, water and energy systems; b) evaluates or performs calculations to determine estimated and actual energy savings, greenhouse gas emission reductions, and project costs; c) conducts tariff and cost of service analyses for the project; d) conducts detailed engineering assessments and analyses of new, innovative and emerging energy efficiency technologies to determine impact in reducing energy use and greenhouse gas emissions, and in increasing reliability and operating efficiency and benefits to the electric grid and/or natural gas system; and e) identifies and recommends RD&D activities associated with the buildings system. The incumbent will perform complex engineering evaluations such as: engineering economics, system reliability, resource adequacy, quality of service, heat transfer, mechanical methods of power and material transmission, thermodynamics, pump analysis, mass and energy balances, environmental controls, material selection and specifications, performance and suitability of components, efficiency and economics of

engineering design options, cost, and performance, power electronics, transmission and distribution equipment and power flow, energy efficiency, heating and air conditioning (HVAC), furnaces, steam boilers, engines, gas turbines, combined heat and power, conversion technologies and processes, and other technologies, components, and systems. The incumbent will read and interpret plans, drawings, specifications and regulations governing energy and water equipment and systems, as it relates to the installation of GHG reduction equipment. The incumbent also provides technical assistance to other staff in analyzing engineering problems. (E)

30% **Project Management.** The incumbent serves as the project manager or may act as a technical lead over other technical personnel on complex engineering projects to support adoption and demonstration of cutting-edge and emerging technologies and impacts to the energy system, including interactions to increase grid flexibility and decarbonization of services in buildings, industrial, agriculture, water and food processing sectors. The incumbent evaluates performance, provide quality control/assurance, reviews interim research products (e.g. results of surveys, test results, design drawings, etc.), evaluates technical changes to project budget/scope, and reviews/approves final products from completed projects. (E)

15% **Project Results Dissemination**. The incumbent oversees the finalization of the most complex project reports, fact sheets, correspondence, and other documents to disseminate project results and lessons learned to Energy Commission staff and the public with a focus on transferring information that provides significant public benefits and value to California and meets the state's energy policies and goals. The incumbent will also engage public and private entities addressing results of funded research and related issues important to the Commission. The incumbent may be required to testify in formal proceedings before the Public Utilities Commission, public interest groups, regulated industries, and various governmental agencies, as well as the Legislature. This function requires the incumbent to effectively communicate research to other engineers, researchers, and the public at large, requiring both a good degree of technical knowledge and expertise and sensitivity to policy issues. In addition to technical proficiency, this liaison responsibility may include assisting with interactions and detailed negotiations with other projects or programs both internally and externally, including national organizations such as the US Department of Energy (DOE), the California Public Utilities Commission (CPUC), US Environmental Protection Agency (EPA), American Gas Association, the US Global Change Research Program, California Air Resources Board (ARB), other state agencies, Local Air Districts, Investor Owned Utilities (IOUs), building and industrial trade associations, and other industry groups. (E)

5% Other duties as required consistent with the specification of this classification. (M)

SIGNATURES	
I Certify That I Am Able To Perform, With Or Without The Assistance Of A Reasonable Accommodation, The Essential Job Duties Of This Position	
Incumbent Date Utilities Engineer	Supervisor Date Energy Resources Specialist III (Supervisor)